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Programme for International Student Assessment (PISA) 2018: highlights from Scotland's results: Global Competence



CHILDREN, EDUCATION AND SKILLS



**social
research**

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Chapter 1: Introduction and methodology

What is PISA?

1. The Programme for International Student Assessment (PISA) is an assessment of 15 year-olds' skills carried out under the auspices of the Organisation for Economic Co-operation and Development (OECD). The programme runs every three years across all OECD members and a variety of partner countries. Scotland has participated in all seven surveys since the first wave of testing in 2000.
2. Each survey cycle focusses on one of three domains: reading, mathematics and science with an additional 'innovative' domain. In 2018 the main domain was reading, with mathematics and science as subsidiary domains. Data on these domains was published in [Programme for International Student Assessment \(PISA\) 2018: highlights from Scotland's results](#) in 2019. In 2018, Scotland participated in the innovative domain for the second time – global competence – and this report represents the results of that assessment.

Methodology

3. The survey was carried out in Scotland between 8 October and 14 December 2018 in 107 secondary schools, with 2,969 students taking part. These students ranged in age between 15 years and 2 months and 16 years and 2 months.
4. The assessments are supplemented by background questionnaires. Pupils are asked about their motivations for study, attitudes to school, views on science and studying, and their socio-economic background. Head teachers are asked about the challenges facing their schools, organisation and factors that they believe affect their students' performance. In 2018, Scotland also participated in the Teacher Questionnaire, including a sample of 1,445 teachers in participating schools.
5. Further information on PISA worldwide, and how it was administered in Scotland, can be found in our [2019 report](#).

Interpreting the results

6. It should be understood that PISA is a sample survey. Like all surveys of this type, it is subject to sampling error. The necessity of surveying only a sample of students, even when chosen at random, runs the risk that such a group will not necessarily reflect the larger population of students. We therefore cannot assume that the values found in the survey are the same as those in the population.
7. This means that being confident that there is a difference between Scotland and the OECD average, or between groups and countries, will depend on both the size of the observed difference and the standard error associated with the sample sizes used. Significance tests are used to assess the statistical validity of comparisons made. In this report, figures in **bold** represent Scotland results which are statistically significantly higher than the OECD average. By "significant" we mean that we are 95 per cent certain that there is a difference.

International comparisons

8. Reports on Scotland's PISA results use international comparisons to provide additional analysis and context. This is usually in the form of comparisons with UK and OECD results. However, this is not possible for global competence as the other UK countries (England, Northern Ireland and Wales) did not take part, and a number of other OECD countries also did not participate in all aspects of the global competence survey. Therefore, this report uses comparisons with all participating countries for the cognitive assessment (27 countries) and with participating OECD countries/economies for the questionnaire. Chapter 4 in this report covers the results of the cognitive assessment for Scotland and the other 26 participating countries, and Chapter 5-9 includes findings from Scotland and the other OECD countries participating in the global competence questionnaire.
9. As this is the first time that the Global Competence assessment has been carried out in PISA, there is no data from previous years to compare to.

How results are displayed in this report

Global Competence indices – responses to the student questionnaire are used to construct a series of global competence indices which indicate whether a country or student characteristic is above or below the OECD average. Scores above zero are higher than the OECD average, while scores below zero are lower than the OECD average. Negative scores do not indicate a negative attitude or view, only that it is below the average.

Gender – results are generally broken down to show comparisons between girls and boys.

Immigration background – results are broken down by immigration background. In these data, non-immigrant students are those whose mother or father (or both) was/were born in the country/economy where the student sat the PISA test, regardless of whether the student him/herself was born in that country or economy. Immigrant students are students whose mother and father were born in a country/economy other than that where the student sat the PISA test.

Proficiency Levels – PISA scores can be grouped into different PISA Proficiency Levels. It is common to look at the proportion of students performing below Proficiency Level 2 and at Proficiency Level 5 or better.

Index of Economic, Social and Cultural Status (ESCS) - The OECD analyses socio-economic background using the Index of Economic, Social and Cultural Status (ESCS). It is constructed from the responses given by students in their background questionnaire and collects information on parental education and occupation, learning resources in the home and cultural possessions. This index is not directly comparable to the measure commonly used in Scotland - the Scottish Index of Multiple Deprivation (SIMD).

Chapter 2: Global Competence

10. In the 2018 cycle of data collection, the Programme for International Student Assessment (PISA) assessed 15-year-old students' global competence. Global competence is defined as:

A multidimensional capacity that encompasses the ability to examine global and intercultural issues, understand and appreciate different perspectives and viewpoints, interact successfully and respectfully with others, and take action for collective well-being and sustainable development.

Assessing Global Competence

11. As defined in PISA 2018, global competence is composed of four highly interdependent dimensions:

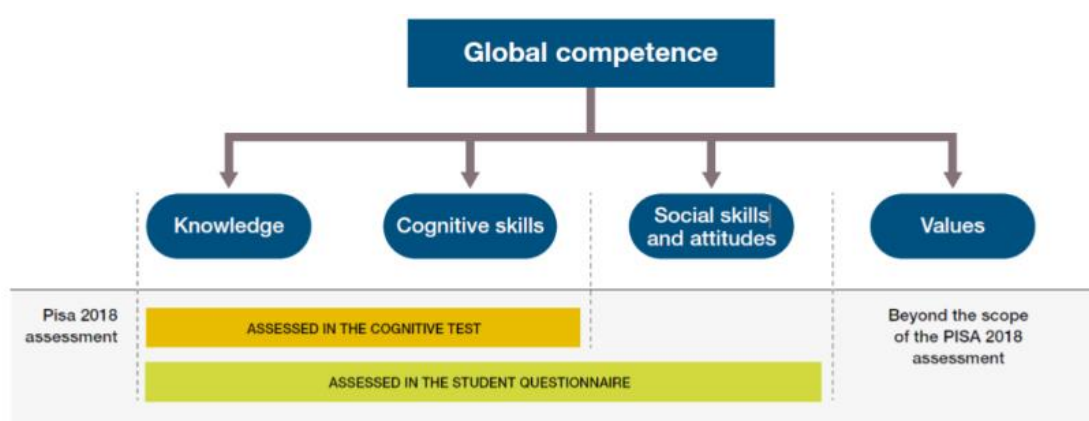
- the capacity to examine issues and situations of local, global and cultural significance (e.g. poverty, economic interdependence, migration, inequality, environmental risks, conflicts, cultural differences and stereotypes)
- the capacity to understand and appreciate different perspectives and worldviews
- the ability to establish positive interactions with people of different national, ethnic, religious, social or cultural backgrounds or gender; and
- the capacity and disposition to take constructive action towards sustainable development and collective well-being.

12. In order to assess these different dimensions, the PISA 2018 global competence assessment comprised two instruments:

- a **cognitive test** focused on the cognitive aspects including knowledge and cognitive skills of three dimensions of global competence: examining issues of local, global and cultural significance; understanding and appreciating the perspectives and worldviews of others; and taking action for collective well-being and sustainable development.
- a **set of questionnaire items** collecting self-reported information on students' awareness of global issues and cultures, skills (both cognitive and social) and attitudes, and information from schools, teachers and parents on activities to promote global competence. The student questionnaire covered all four dimensions of global competence.

13. Students in 27 countries/economies, including Scotland, sat both the global competence cognitive test and completed the global competence questionnaire items; students in a further 39 countries/economies completed the global competence module in the questionnaire only.

Figure 2.1 The aspects of global competence covered by the test and questionnaire



The PISA global competence cognitive test

14. The global competence test was undertaken in 27 countries and economies and was fully integrated into the assessment design together with the core domains of reading, mathematical and scientific literacy.

Table 2.1: 27 countries that undertook the global competence cognitive test
(*OECD member)

Albania	Brunei Darussalam	Canada*	Chile*
Chinese Taipei	Colombia*	Costa Rica	Croatia
Greece*	Hong Kong (China)	Indonesia	Israel*
Kazakhstan	Korea*	Latvia*	Lithuania*
Malta	Morocco	Panama	Philippines
Russian Federation	Serbia	Singapore	Slovak Republic*
Spain*	Thailand	Scotland (United Kingdom)*	

The PISA global competence student questionnaire

15. The PISA assessments are supplemented by background questionnaires. Students were asked about their motivations for study, attitudes to school, views on reading and studying, and their socio-economic background. In 2018, the student questionnaire included self-reported information on students' awareness of global issues and cultures, skills (both cognitive and social) and attitudes. Sixty-six countries/economies included global competence questions as part of the PISA student questionnaire.

Table 2.2: Countries that took part in the PISA global competence questionnaire
(*OECD member)

Albania	Argentina	Australia*	Austria*
Baku (Azerbaijan)	Belarus	Bosnia and Herzegovina	Brazil
Brunei Darussalam	Bulgaria	Canada*	Chile*
Chinese Taipei	Colombia*	Costa Rica	Croatia
Cyprus	Dominican Republic	Estonia*	North Macedonia
France*	Germany*	Greece*	Hong Kong (China)
Hungary*	Iceland*	Indonesia	Ireland*
Israel*	Italy*	Jordan	Kazakhstan
Korea*	Kosovo	Latvia*	Lebanon
Lithuania*	Macao (China)	Malaysia	Malta
Mexico*	Montenegro	Morocco	New Zealand*
Panama	Peru	Philippines	Poland*
Portugal*	Republic of Moldova	Romania	Russian Federation
Saudi Arabia	Serbia	Singapore	Slovak Republic*
Slovenia*	Spain*	Switzerland*	Thailand
Turkey*	Ukraine	United Arab Emirates	Scotland (United Kingdom)*
Uruguay	Viet Nam		

Chapter 3: Main messages from the report

In the 2018 survey, the Programme for International Student Assessment (PISA) assessed 15-year-old students' global competence. Global competence is defined as:

A multidimensional capacity that encompasses the ability to examine global and intercultural issues, understand and appreciate different perspectives and viewpoints, interact successfully and respectfully with others, and take action for collective well-being and sustainable development.

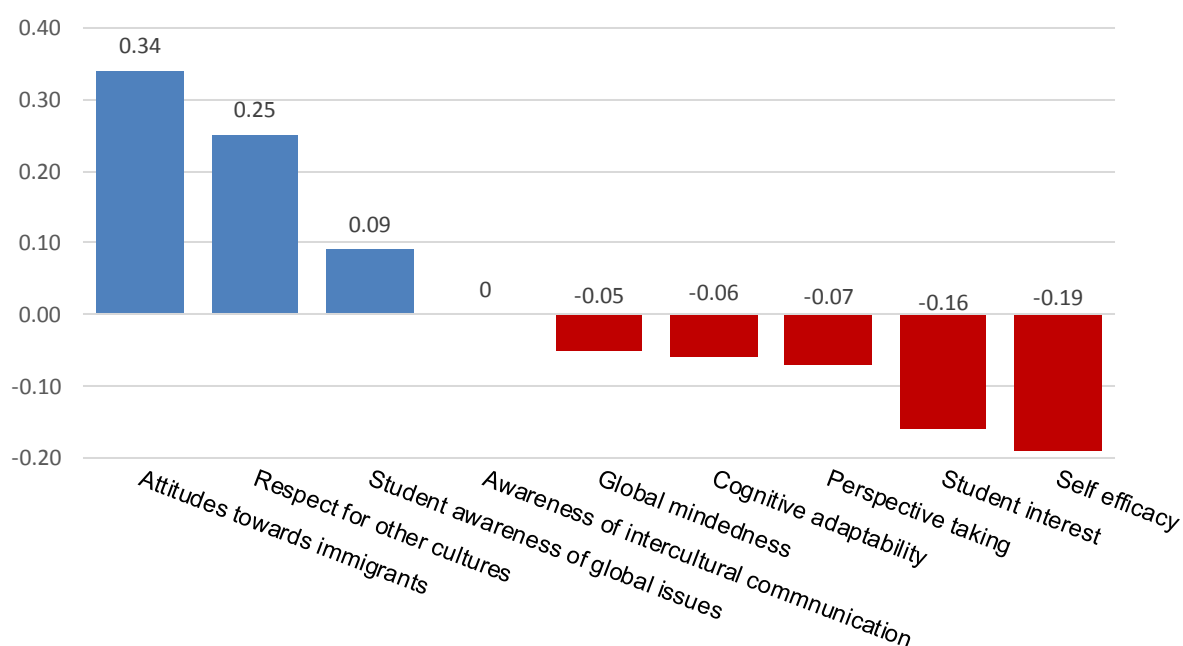
Results of the assessment

- Scotland's average score in the global competence assessment was 534 which was higher than the average of all participating countries of 474.
- Two countries achieved an average score higher than Scotland, two countries were similar, and 22 countries were lower.
- Girls outperformed boys in every country taking part in the assessment, with the exception of Scotland where performance was similar.
- Twelve per cent of students in Scotland were at Level 5, the highest level in the assessment, compared to 4.3% of students across all countries. Only two countries had a higher proportion of students assessed at Level 5.

Attitudes and Dispositions

- The student questionnaire was used to construct indices to measure different areas of global competence. The OECD average is set at zero; values above zero are above the OECD average (in blue), and values below zero are below the OECD average (in red). Scotland's scores for each index is shown below:

Chart 3.1: Global Competence indices – Scotland compared to OECD average



- Compared to the OECD average, students in Scotland had above average scores in their attitudes towards immigrants (0.34), respect for people from other cultures (0.25), and awareness of global issues (0.09). Students in Scotland had lower than average scores in interest in other cultures (-0.16) and self-efficacy (-0.19).
- Reported attitudes and disposition varied by gender in Scotland. Girls were more likely to have positive attitudes towards immigrants and respect for people from other cultures than boys in Scotland and the OECD average for girls. Boys scored higher than girls in Scotland for self efficacy regarding global issues, while boys and girls had a similar level of awareness of global issues.
- Reported attitudes and disposition varied by social background in Scotland and internationally. Across almost all indices, with the exception of perspective taking, scores for global competence are higher for students from a more advantaged background. This is particularly the case for student awareness of global issues and self-efficacy.
- Immigrant students in Scotland had above average scores in all of the indices and had higher scores than non-immigrant students.

Students' awareness of global issues

- Students in Scotland had a higher awareness of global issues (0.09) than the OECD average.
- Girls and boys in Scotland reported a similar level of awareness of global issues.
- The global issues that students in Scotland were most familiar with were causes of poverty (87% of students), equality between men and women (85%), and climate change/global warming (78%).

Understanding and appreciating the perspectives and worldviews of others

- Students in Scotland had an above average respect for people from other cultures (0.25), including respecting their values and opinions.
- Students in Scotland were among the 10 countries/economies (out of 66) with the most positive attitudes towards immigrants (0.34).
- Students in Scotland had a below average interest in learning about other cultures (-0.16), particularly concerning the religions of the world.
- Girls have a more positive attitude to learning about and respecting other cultures than boys, while boys report greater cognitive adaptability.

Ability to engage in open, appropriate and effective communication across cultures

- Compared to the OECD average, students in Scotland were more likely to have contact with people from other countries in their family or at school, but less likely to have contact in their neighbourhood.
- Across all countries and economies, including Scotland, girls reported greater awareness of intercultural communication than boys.

Taking action for collective wellbeing and sustainable development

- A higher proportion of students in Scotland (81.4%) reported thinking of themselves as a citizen of the world than the OECD average (76.2%)
- Almost two-thirds of students in Scotland (64.2%) reduce the amount of energy that they use at home to protect the environment.
- Girls, students from advantaged backgrounds, and immigrant students in Scotland reported taking more actions for sustainability and wellbeing.

Education for living in an interconnected world

- Students in Scotland report fewer learning activities related to global competence in school (4.9) compared to the OECD average (5.4).
- More than 4 out of 5 students (82.2%) were in a school where teachers felt they could adapt their teaching to the cultural diversity of students.

Chapter 4: Results of the Global Competence assessment

Key findings

- Scotland's average score in the global competence assessment was 534, higher than the average of all participating countries of 474
- Two countries/economies achieved an average score higher than Scotland, two countries were similar, and 22 countries were lower
- Girls outperformed boys in every country taking part in the assessment, with the exception of Scotland where performance was similar.

The PISA 2018 global competence cognitive assessment

16. The global competence cognitive assessment was conducted at the same time as the PISA 2018 reading, mathematics and science assessments. The global competence assessment consisted of 69 test items organised in 18 units and in four clusters. The global competence cognitive test in the 2018 main survey assessed three cognitive processes that support global competence:

- Evaluate information, formulate arguments and explain issues and situations;
- Identify and analyse multiple perspectives; and
- Evaluate actions and consequences

17. Of the 27 countries and economies that participated in the global competence cognitive test, 11 were OECD members. For this reason, all averages presented in this chapter are for all 27 participating countries and economies combined.

Performance in global competence assessment

18. Scotland's average score in the global competence assessment was 534 compared to the average of all participating countries of 474. Two countries achieved an average score higher than Scotland, two countries were similar, and 22 countries were lower. The top-performing countries/economies were Canada, Hong Kong (China), Scotland, Singapore and Chinese Taipei, with mean performance scores more than 50 points above the all-country average. Table 4.1 outlines which countries were statistically significantly above, similar to and below Scotland:

Table 4.1: Countries with a higher/similar/lower score than Scotland

Higher score than Scotland	Similar score to Scotland	Lower score than Scotland	
Singapore	Hong Kong (China)	Spain	Serbia
Canada	Chinese Taipei	Korea	Colombia
		Croatia	Costa Rica
		Latvia	Brunei
		Israel	Albania
		Lithuania	Thailand
		Greece	Panama
		Slovak Republic	Indonesia
		Russian Federation	Kazakhstan
		Malta	Morocco
		Chile	Philippines

19. Eleven OECD member states took part in the Global Competence assessments, with Scotland's score being lower than one member, and higher than nine OECD member states. Chart 4.1 outlines the Global Competence scores for each country/economy that took part in the assessment.
20. As well as comparison between countries' mean scores, it is important to look at how these are distributed within a country. The standard deviation measures the variation in performance amongst 15-year-old students within each country/economy. A higher standard deviation indicates more variation in the results (i.e. a larger proportion of pupils have a PISA score that is further away from the mean).
21. The average standard deviation in performance in the global competence cognitive assessment was 91 score points. Variations measured by the standard deviation in performance scores were the largest in Canada, Israel, Malta, Scotland and Singapore, exceeding 100 score points. Scotland's standard deviation was 107 score points, which was narrower than one country, similar to two countries, and wider than 23 countries.
22. PISA scores can be grouped into different Proficiency Levels. It is common to look at the proportion of students performing below Proficiency Level 2 and at Proficiency Level 5. A description of global competence levels are shown in Figure 4.1.

Chart 4.1: Global Competence assessment scores by country

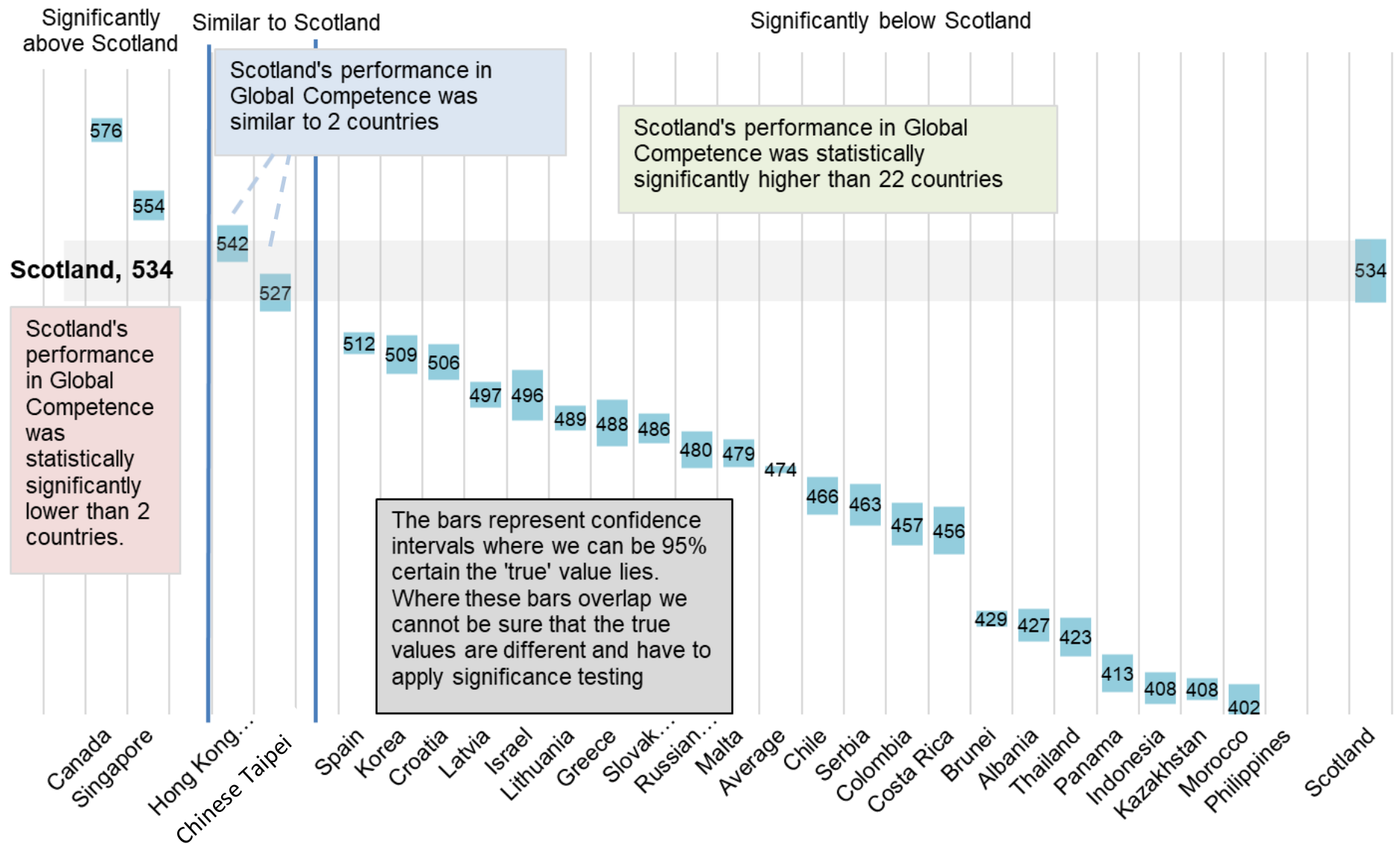


Figure 4.1: Global Competence assessment levels

Proficiency at Level 5

At the highest level of proficiency in global competence, students are able to analyse and understand multiple perspectives. They are able to examine and evaluate large amounts of information without much support provided in the unit's scenario. Students can effectively explain situations that require complex thinking and extrapolation and can build models of the situation described in the stimulus. On average across all countries, 4% of students attained the highest level of proficiency, Level 5, in global competence. The largest proportions of students who scored at this level were found in Singapore (22%), Canada (15%) and Scotland (12%).

Proficiency at Level 4

At level 4, students could analyse as many as five different perspectives while demonstrating the ability to reason further beyond the information that is provided in the scenario. Students can provide explanations of unfamiliar situations that require deeper reasoning such as causal inference. However, at this level, explanations provided by the students are facilitated by the information provided in the test unit's summary. On average across all countries, 9% of students attained proficiency Level 4 in global competence. The proportions of students who scored at this level were the largest in the top-performing countries.

Proficiency at Level 3

Students at level 3 of proficiency in global competence are able to analyse two to three perspectives. They are able to reason with the information provided in the scenario of the test unit as long as the amount of information that must be evaluated is manageable. Students also demonstrate an ability to evaluate greater amounts of information as long as they do not have to extrapolate too much beyond the information provided to them. On average across all countries, 16% of students attained proficiency Level 3 in global competence.

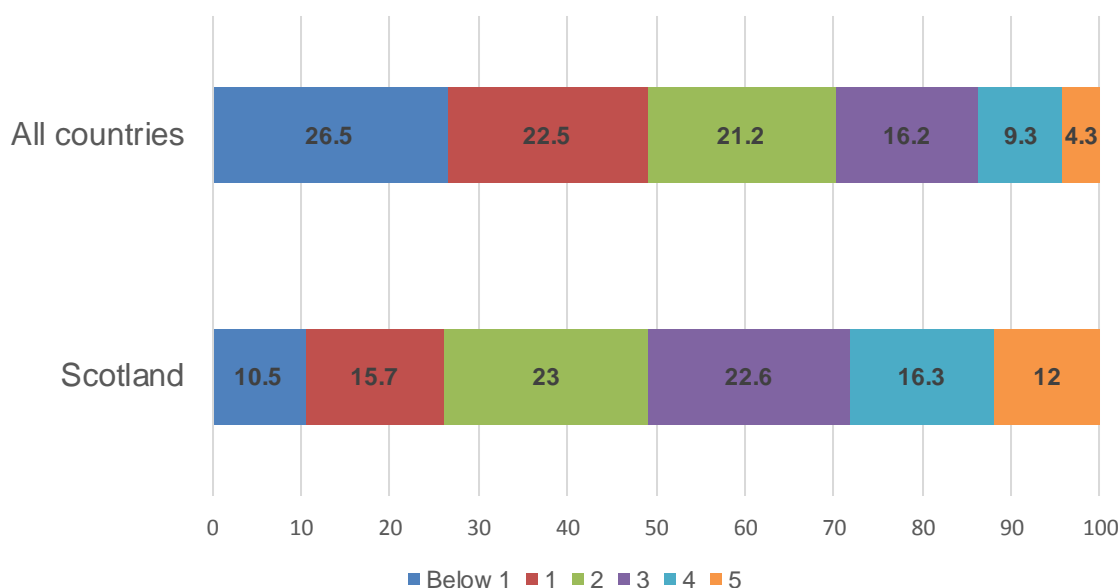
Proficiency at Level 2

At this level of proficiency, students can identify two perspectives and can evaluate minimal to medium amounts of information. They can reason beyond the described situation when the amount of information provided to them remains minimal. On average across all countries, 21% of students attained Level 2 proficiency in global competence.

Proficiency at Level 1

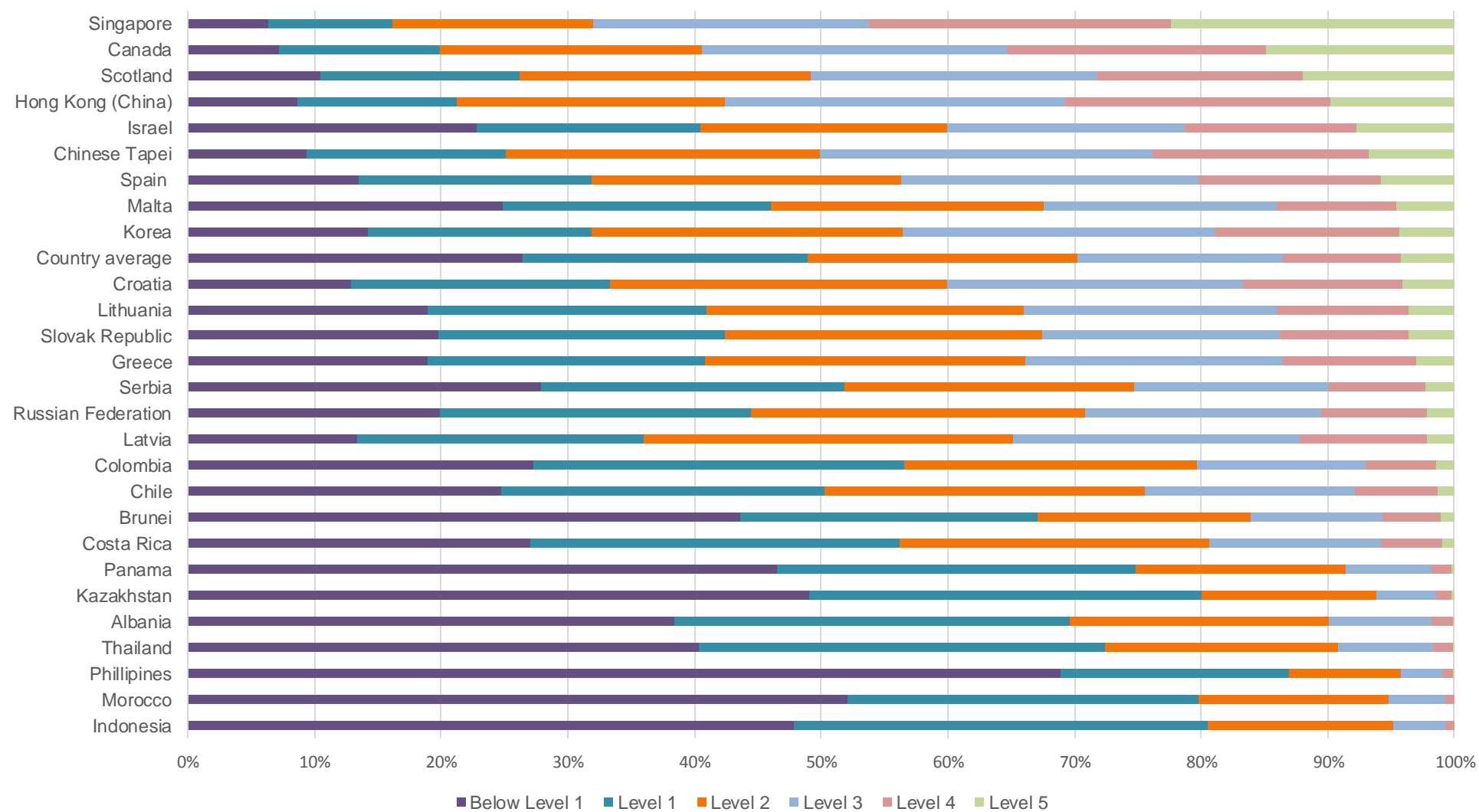
Students, at level 1, can identify one perspective correctly and use information from the summary of a scenario to complete the corresponding question. They can reason beyond the explicit information provided in the stimulus to understand a novel situation when the context is very familiar. At this level, students are able to evaluate a minimal amount of information and to describe a situation or aspects of a situation. On average across all countries, 23% of students performed at Level 1 proficiency in global competence.

Chart 4.2: PISA levels for Scotland and all participating countries



23. Chart 4.2 shows that 12% of students taking the assessment in Scotland were assessed to be at Level 5, compared to 4.3% of students across all countries. Only two countries had a higher proportion of students assessed at Level 5.
24. 10.5% of students taking the assessment in Scotland were assessed as below Level 1, compared to 26.5% of students across all countries. Four countries had a lower proportion of students assessed as below Level 1.
25. The proportion of students achieving each level in each country is shown in Chart 4.3. The chart is ordered by the proportion of students achieving Level 5 in the assessments.

Chart 4.3: Proportion of students achieving each level in participating countries



How does performance on the cognitive test vary according to students' characteristics?

26. Table 4.2 outlines the average scores for students in different groups in Scotland. Girls and boys in Scotland achieved a similar score (541 compared to 527). Girls outperformed boys in every country taking part in the assessment, with the exception of Scotland where the difference was not statistically significant.

Table 4.2: Global Competence assessment scores by student group

	Scotland	OECD
Gender		
Girls	541	487
Boys	527	461
PISA Index of economic, social and cultural status		
First quarter (most disadvantaged)	497	440
Second quarter	519	463
Third quarter	547	481
Fourth quarter (least disadvantaged)	586	516
Immigration status		
Non-immigrant students	535	476
Immigrant students	546	459

*Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)*

27. The OECD measure social background using their own Index of Economic, Social & Cultural Status (ESCS) calculated from data given by students in the background questionnaire. On average across the 27 participating countries and economies, the least disadvantaged students (fourth quarter) outperformed their disadvantaged peers (first quarter) by 75 score points. In Scotland, the difference between the two groups was above the average (89 points).

28. Non-immigrant and immigrant students achieved a similar average score in the assessment, with the difference being not statistically significant.

Chapter 5: Examining Local, Global and Intercultural Issues

Key findings

- Students in Scotland had a higher awareness of global issues (0.09) than the OECD average
- Girls and boys in Scotland reported a similar level of awareness of global issues
- The global issues that students in Scotland were most familiar with were causes of poverty (87% of students), equality between men and women (85%), and climate change/global warming (78%)
- Boys reported greater self-efficacy regarding global issues than girls.

Students' awareness of global issues

29. Students were asked about their awareness of a range of global issues in the student questionnaire. Answers were then used to construct an index of awareness of global issues. Positive values in this index indicate a greater ability to understand and take different perspectives than the average student across OECD countries.

Table 5.1: Proportion of students who know about the global issue or very familiar with it

Index of global awareness

	Scotland	OECD ¹
Equality between men and women	85.0	83.0
Causes of poverty	87.0	78.3
Hunger and malnutrition	75.5	77.9
International conflicts	65.5	66.1
Migration	79.1	79.2
Global health	59.4	65.1
Climate change and global warming	78.4	78.5
<i>Index of global awareness</i>	0.09	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

30. Compared to the average of all participating OECD countries, pupils in Scotland were more likely to state that they knew about the causes of poverty (87.0% compared to

¹ 27 OECD member states participated in the Global Competence questionnaire

78.3%) and equality between men and women (85.0% compared to 83.0%), but were less likely to agree that they were familiar with global health issues (59.4% compared to 65.1%) and hunger and malnutrition (75.9% compared to 77.9%). Across the OECD countries, the topic that pupils were most familiar with was equality between men and women.

31. In the majority of countries, girls reported a higher level of awareness of global issues than boys. However, girls and boys in Scotland reported a similar level of awareness of global issues.
32. Differences in awareness of global issues were also observed between immigrant and non-immigrant students, even after accounting for students' and schools' socio-economic profile. Positive differences in favour of immigrants were observed in 17 of the 34 countries and economies where more than 5% of all students had an immigrant background, including students in Scotland.

Self-efficacy regarding global issues

33. Students in PISA 2018 were asked to report the extent to which they could explain or discuss global issues. Responses from these questions were used to create an index of self-efficacy for each country. Positive values in this index indicate a greater ability to explain or discuss global issues than the average student across OECD countries.

Table 5.2: Proportion of students who stated that they could explain or discuss global issues on their own

Index of self-efficacy

	Scotland	OECD ²
Establish a connection between prices of textiles and working conditions in the countries of production	45.8	58.0
Explain how economic crises in single countries affect the global economy	51.7	60.5
Explain how carbon-dioxide emissions affect global climate change	61.4	62.9
Discuss the consequences of economic development on the environment	51.5	64.8
Explain why some countries suffer more from global climate change than others	67.6	72.3
Discuss the different reasons why people become refugees	79.5	77.2
<i>Index of self-efficacy</i>	-0.19	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

34. Compared to the OECD average, students in Scotland were less likely to report that they could explain or discuss global issues on their own (-0.19), such as explaining

² 27 OECD member states participated in the Global Competence questionnaire

how economic crises in single countries affect the global economy. However, pupils in Scotland were more confident than the OECD average in discussing the different reasons why people become refugees. Students in Scotland were less confident in explaining economic concepts and more confident in explaining environmental and climate change issues.

35. In 22 of 65 countries and economies, girls showed greater self-efficacy regarding global issues than boys; the reverse was true in 17 countries including Scotland.
36. Immigrant students in 15 of 34 countries and economies, including Scotland, with more than 5% immigrant students enrolled in their schools exhibited greater self-efficacy regarding global issues than non-immigrant students, even after accounting for students' and schools' socio-economic profile.
37. When considering students' socio-economic status, the findings show that students in the top quarter of the PISA index of economic, social and cultural status (i.e. least disadvantaged) showed greater self-efficacy regarding global issues than students in the bottom quarter of that index.
38. In Scotland, there was a strong link between awareness of global issues and perceived self-efficacy in global competence related tasks. After accounting for student background, international analysis shows that pupils in Scotland had the largest increase in self-efficacy for each increase in awareness.

Chapter 6: Understanding and appreciating the perspectives and worldviews of others

Key findings

- Students in Scotland had an above average level of respect for people from other cultures compared to the OECD average
- Students in Scotland were among the 10 countries/economies out of 66 with the greatest proportions responding positively on attitudes towards immigrants
- Students in Scotland had a below average interest in learning about other cultures, particularly concerning the religions of the world
- Girls have a more positive attitude to learning about and respecting other cultures, while boys report greater cognitive adaptability

Students' ability to understand the perspectives of others

39. PISA 2018 asked students to report on their ability to understand different perspectives by responding to five statements. These were combined to produce an index of perspective taking for each country. Positive values in this index indicate a greater ability to understand and take different perspectives than the average student across OECD countries.

40. Table 6.1 shows that students in Scotland were less likely than the OECD average to state that they were able to understand the perspectives of others.

Table 6.1: Proportion of pupils who agreed that the statement was 'very much' or 'mostly like me'

Index of perspective taking

	Scotland	OECD ³
I try to look at everybody's side of a disagreement before I take a decision	57.0	59.5
I believe that there are two sides to every question and try to look at them both	58.3	62.7
I sometimes try to understand my friends better by imagining how things look from their perspective	62.1	64.5
Before criticising somebody, I try to imagine how I would feel if I were in their place	52.4	55.0
When I'm upset at someone, I try to take the perspective of that person for a while	33.9	40.5
<i>Index of perspective taking</i>	-0.07	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

³ 27 OECD member states participated in the Global Competence questionnaire

41. The index of students' ability to understand the perspectives of others varied according to students' characteristics. In all countries and economies except Dominican Republic, girls reported a greater capacity than boys to take others' perspective.

42. Differences in the capacity to understand the perspectives of others were observed between immigrant and native-born students in 10 countries, including Scotland, with immigrant students reporting a greater capacity to understand different perspectives.

Students' interest in learning about other cultures

43. Pupils were asked about their interest in learning about other cultures, including how people live, their religions, and their traditions.

Table 6.2: Proportion of students who answered 'very much' or 'mostly' like to each statement

Index of interest in other cultures

	Scotland	OECD ⁴
I want to learn how people live in different countries	52.3	58.8
I want to learn more about the religions of the world	29.3	40.1
I am interested in how people from various cultures see the world	48.8	54.7
I am interested in finding out about the traditions of other cultures	48.4	54.0
<i>Index of interest in other cultures</i>	-0.16	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

44. An index of students' interest in learning about other cultures was constructed for each country using the above statements. This index showed that pupils in Scotland had a below average interest in learning about other cultures (-0.16), particularly concerning the religions of the world. Girls and socio-economically advantaged students showed greater interest in other cultures than boys and disadvantaged students both internationally and in Scotland.

⁴ 27 OECD member states participated in the Global Competence questionnaire

Respect for people from other cultures

45. PISA 2018 asked students the extent to which they respect people from other cultures:

Table 6.3: Proportion of students who answered ‘very much’ or ‘mostly’ like me to each statement

Index of respect for people from other cultures

	Scotland	OECD ⁵
I respect people from other cultures as equal human beings	87.2	82.5
I treat all people with respect regardless of their cultural background	86.3	81.2
I give space to people from other cultures to express themselves	85.1	78.4
I respect the values of people from different cultures	85.2	79.3
I value the opinions of people from different cultures	84.9	77.6
<i>Index of respect for people from other cultures</i>	0.25	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

46. An index of respect for people from other cultures was constructed for each country using the above statements. This index showed that students in Scotland had an above average respect for people from other cultures (0.25), including respecting their values and opinions. Similar to interest in other cultures, girls and socio-economically advantaged students showed greater respect for other cultures than boys and disadvantaged students both internationally and in Scotland.

Cognitive adaptability

47. PISA 2018 asked students about their ability to adapt to new situations. These were combined to produce an index of cognitive adaptability. Positive values in the index indicate that students have a greater ability to adapt than the average student across OECD countries.

⁵ 27 OECD member states participated in the Global Competence questionnaire

Table 6.4: Proportion of students who answered ‘very much’ or ‘mostly’ like me to each statement

Index of cognitive adaptability

	Scotland	OECD ⁶
I can deal with unusual situations	56.9	58.9
I can change my behaviour to meet the needs of new situations	69.2	67.1
I can adapt easily to a new culture	45.4	49.3
When encountering difficult situations with other people, I can think of a way to resolve the situation	56.4	58.7
I am capable of overcoming my difficulties in interacting with people from other cultures	55.0	58.0
<i>Index of cognitive adaptability</i>	-0.06	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

48. Boys reported greater cognitive adaptability than girls in Scotland and in 28 out of the 65 countries and economies that took part in the questionnaire. Scotland was one of the six countries where the largest gaps in favour of boys were observed. Girls reported greater cognitive adaptability in only six countries. The gender differences suggest girls have a more positive attitude to learning about and respecting other cultures, while boys report greater cognitive adaptability. As well as boys, immigrants and pupils from advantaged backgrounds were more likely to report greater cognitive adaptability.

⁶ 27 OECD member states participated in the Global Competence questionnaire

Students' attitudes towards immigrants

49. Students were asked whether they agree with a series of statements regarding their attitudes towards immigrants.

Table 6.5: Proportion of students who answered 'very much' or 'mostly' like me to each statement

Index of student attitudes towards immigrants

	Scotland	OECD ⁷
Immigrants should have the same rights that everyone else in the country has	87.5	80.2
Immigrants should have the opportunity to continue their own customs and lifestyle	87.0	76.3
Immigrants who live in the country for several years should have the opportunity to vote in elections	85.4	72.3
Immigrant children should have the same opportunities for education that other children in the country have	91.3	85.1
<i>Index of students attitudes towards immigrants</i>	0.34	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

50. Students in Scotland were among the 10 countries/economies with the most positive attitudes towards immigrants, with values in the index that were higher than average. Girls, immigrants, and students from an advantaged socio-economic status in Scotland were more likely to have a positive attitude towards immigrants.

⁷ 27 OECD member states participated in the Global Competence questionnaire

Chapter 7: Ability to engage in open, appropriate and effective communication across cultures

Key findings

- Compared to the OECD average, students in Scotland were more likely to have contact with people from other countries in their family or at school, but less likely to have contact in their neighbourhood
- Across all countries and economies, including Scotland, girls reported greater awareness of intercultural communication than boys.

Awareness of intercultural communication

51. PISA 2018 asked students to describe their awareness of intercultural communications. They were asked to respond to seven statements related to the following hypothetical scenario: “Imagine you are talking in your native language to people whose native language is different from yours.” Answers were given on a four-point scale – “strongly disagree”, “disagree”, “agree”, “strongly agree” – and were combined into the index of awareness of intercultural communication. A positive value in this index indicates that students have a greater awareness of intercultural communication than the average student across OECD countries.

Table 7.1 Proportion of students who disagreed/agreed that, when talking to people whose native language is different from theirs, they do the following:

Index of awareness of intercultural communication

	Scotland	OECD ⁸
I carefully observe their reactions	84.9	82.2
I frequently check that we are understanding each other correctly	85.4	84.4
I listen carefully to what they say	91.3	88.0
I choose my words carefully	83.2	79.8
I give concrete examples to explain my ideas	81.6	80.8
I explain things very carefully	82.1	77.7
If there is a problem with communication, I find ways around it	84.7	84.9
<i>Index of awareness of intercultural communication</i>	<i>0.00</i>	<i>0.00</i>

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

⁸ 27 OECD member states participated in the Global Competence questionnaire

52. Students in Scotland were more likely to agree to the majority of the statements compared to the average for OECD countries, such as explaining things or choosing words carefully.
53. Across all countries and economies, including Scotland, girls reported greater awareness of intercultural communication than boys. Advantaged students in all countries and economies report greater awareness of intercultural communication than disadvantaged students did. In Scotland, immigrant students reported greater awareness than non-immigrant students.

Contact with people from other countries

54. Students were asked a binary yes-or-no question about whether they have contact with people from other countries at school, in their family, in their neighbourhood and in their circle of friends.

Table 7.2: Proportion of students who reported that they have contact with people from other countries

	Scotland	OECD ⁹
In their family	65.8	54.3
At school	57.6	53.1
In their neighbourhood	29.9	38.3
In their circle of friends	64.5	62.7

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

55. Compared to the OECD average, students in Scotland were more likely to have contact with people from other countries in their family or at school, but less likely to have contact in their neighbourhood. Almost two-thirds (64.5%) of students in Scotland reported having contact with people from other countries in their circle of friends.
56. Girls in Scotland were more likely than boys to report contact with people from another country in their family (69% compared to 63%) and in their circle of friends (68% compared to 61%), whereas boys were more likely to report contact at school (60% compared to 55%). Students from more advantaged backgrounds were more likely to have contact with people from another country in their family, at school and in their circle of friends, but contact was similar across backgrounds in local neighbourhoods.
57. OECD analysis found significant and positive associations between having contact with people from other countries and students' attitudes and dispositions in most countries and economies. The indices that were highly associated with contact with people from other countries are: students' cognitive adaptability, self-efficacy regarding global issues, and interest in learning about other cultures.

⁹ 27 OECD member states participated in the Global Competence questionnaire

Chapter 8: Taking action for collective well-being and sustainable development

Key findings

- A higher proportion of students in Scotland (81.4%) reported thinking of themselves as a citizen of the world than the OECD average (76.2%)
- Almost two-thirds of students in Scotland (64.2%) reduce the amount of energy that they use at home to protect the environment
- Girls, students from advantaged backgrounds, and immigrant students in Scotland reported taking more actions for sustainability and wellbeing

A sense of agency regarding global issues

58. PISA 2018 asked students the extent to which they agree (“strongly disagree”, “disagree”, “agree”, “strongly agree”) with six statements relating to their sense of agency regarding global issues. Responses to these statements were combined to create the index of agency regarding global issues. Positive values in this index indicate that students have a greater sense of global-mindedness than the average student across OECD countries.

Table 8.1: Proportion of students who agreed with the following statements:
Index of global mindedness

	Scotland	OECD ¹⁰
I think of myself as a citizen of the world	81.4	76.2
When I see the poor conditions that some people in the world live under, I feel a responsibility to do something about it	66.4	67.3
I think my behaviour can impact people in other countries	52.7	56.0
It is right to boycott companies that are known to provide poor workplace conditions for their employees	70.4	66.3
I can do something about the problems of the world	54.4	57.5
Looking after the global environment is important to me	71.6	77.9
<i>Index of global mindedness</i>	-0.05	0.00

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

¹⁰27 OECD member states participated in the Global Competence questionnaire

59. Compared to the OECD average, pupils in Scotland were more likely to think of themselves as a citizen of the world and to agree that it is right to boycott companies that are known to provide poor workplace conditions for their employees. Girls, immigrant students and those from a more advantaged background were more likely to have positive scores for global mindedness.

Capacity to take action

60. PISA 2018 assessed students' willingness to take action using a series of eight yes-or-no statements. The statements covered topics related to environmental protection, gender equality, and staying informed about international and social issues, such as poverty and human rights.

Table 8.2: Proportion of students who reported that they take the following actions:

	Scotland	OECD ¹¹
I reduce the energy I use at home to protect the environment	64.2	70.6
I choose certain products for ethical or environmental reasons, even if they are a bit more expensive	33.2	45.3
I sign environmental or social petitions online	21.5	25.4
I keep myself informed about world events via Twitter or Facebook	78.0	64.0
I boycott products or companies for political, ethical or environmental reasons	19.2	26.8
I participate in activities promoting equality between men and women	24.6	32.8
I participate in activities in favour of environmental protection	21.4	38.5
I regularly read websites on international social issues	42.3	46.4

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

61. Students in Scotland participate in a range of actions to protect the environment, including reducing the energy used at home (64.2%), choosing certain products for environmental reasons (33%), signing petitions online (21.5%), and boycotting products (19.2%). However, they were less likely than the OECD average to do so. One action that students were more likely than the OECD average to take was to keep informed about world events via Twitter or Facebook (78%).

62. Table 8.3 shows the average number of actions taken by different groups for sustainability and collective wellbeing:

¹¹ 27 OECD member states participated in the Global Competence questionnaire

Table 8.3: Number of actions taken by students, by gender, students' socio-demographic profile and immigration status

	Scotland	OECD ¹²
Gender		
Girls	3.25	3.56
Boys	2.81	3.40
PISA Index of economic, social and cultural status		
First quarter (most disadvantaged)	2.79	3.26
Second quarter	2.85	3.40
Third quarter	3.11	3.52
Fourth Quarter (least disadvantaged)	3.50	3.72
Immigration status		
Non-immigrant students	3.01	3.46
Immigrant students	3.31	3.54

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

63. In 26 countries and economies, boys reported a greater number of actions taken for sustainability and collective wellbeing. The reverse was true in 17 countries, including Scotland. Both boys and girls in Scotland reported taking fewer actions than the OECD average for their gender.
64. Students from a more advantaged background reported taking a greater number of actions in both Scotland and across the OECD, while immigrant students report a greater number than non-immigrant students.

¹² 27 OECD member states participated in the Global Competence questionnaire

Chapter 9: Education for living in an interconnected world

Key findings

- Students in Scotland report fewer learning activities related to global competence in school compared to the OECD average
- More than 4 out of 5 students (82.2%) had teachers who felt they could adapt their teaching to the cultural diversity of students

Activities that may promote global competence

65. Students who participated in PISA 2018 were asked 10 questions about different learning activities to which they are exposed.

Table 9.1: Percentage of students who report they learn the following at school:

	Scotland	OECD ¹³
I learn about the interconnectedness of countries' economies	39.6	54.9
I learn how to solve conflicts with other people in our classrooms	52.4	64.4
I learn about different cultures	69.7	75.6
We read newspapers, look for news on the internet or watch the news together during classes	45.1	40.7
I am often invited by my teachers to give my personal opinion about international news	40.9	45.7
I participate in events celebrating cultural diversity throughout the school year	37.6	40.5
I participate in classroom discussions about world events as part of the regular instruction	55.6	55.7
I analyse global issues together with my classmates in small groups during class	42.7	48.2
I learn how people from different cultures can have different perspectives on some issues	56.3	61.8
I learn how to communicate with people from different backgrounds	52.7	58.2
Number of learning activities¹⁴	4.91	5.45

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

¹³ 27 OECD member states participated in the Global Competence questionnaire

¹⁴ Average number of learning activities in table reported per pupil

66. The most common learning activities reported by students in schools in Scotland were learning about different cultures at school (69.7%), learning how different cultures can have different perspectives (56.3%) and participating in classroom discussions about world events (55.6%). Compared to the OECD average, students in Scotland reported fewer learning activities related to global competence in school, however a higher proportion of students in Scotland reported reading newspapers, looking for news on the internet or watching the news together during classes (45.1% compared to 40.1%). The number of learning activities reported by students in Scotland (4.91) is lower than the OECD average (5.45).
67. On average across OECD countries, boys were slightly more likely than girls to have access to intercultural and global learning opportunities. However, in Scotland there was no statistically significant difference between boys and girls.
68. On average across the OECD, advantaged students reported greater access to learning opportunities than disadvantaged pupils. This was the case in 33 of 65 countries and economies, including Scotland.

To what extent do teachers include global topics in lessons?

69. Eighteen countries participated in the global competence module of the teacher questionnaire. The results below have been converted from teacher responses to proportion of students where teachers include the global issues in their lessons. Students are most likely to have teachers who include climate change and global warming (54.7% of students have teachers who reported that this topic is included in their lessons). Climate change is followed by equality between men and women (46.7%), global health (44.0%), and causes of poverty (39.7%). Compared to the average of the 18 countries taking part in the teacher survey, a lower proportion of students were in schools where teachers include these issues in their lessons.

Table 9.2: Proportion of students where teachers include the following global issues in their lessons:

	Scotland	All participating countries ¹⁵
Climate change and global warming	54.7	71.5
Equality between men and women	46.7	66.7
Global health	44.0	65.2
Hunger or malnutrition	36.2	60.2
Causes of poverty	39.7	60.0
Migration	36.1	55.7
International conflicts	33.6	54.2

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

¹⁵ 18 countries took part in the Teacher Survey

Multicultural learning at school

Head teachers in participating schools were asked 10 questions about whether particular intercultural learning activities are included in lessons and activities at their school.

Table 9.3: Percentage of students whose head teacher agreed with the following statements on multicultural learning:

	Scotland	OECD ¹⁶
In our school, students learn about the histories of diverse cultural groups that live in our country	90.4	84.7
In our school, students learn about the histories of diverse cultural groups that live in other countries	97.9	83.1
In our school, students learn about the cultures (e.g. beliefs, norms, values, customs or arts) of diverse cultural groups that live in our country	95.8	89.4
In our school, students learn about different cultural perspectives on historical and social events	94.5	89.6
Our school supports activities that encourage students' expression of diverse identities	98.2	85.0
Our school offers an exchange programme with schools in other countries	32.0	45.7
Our school organises multicultural events (e.g. cultural diversity day)	60.8	56.9
In our school, we celebrate festivities from other cultures	60.7	35.4
In our school, students are encouraged to communicate with people from other cultures via web/Internet/social media	40.7	54.4
Our school adopts different approaches to educate students about cultural differences	81.7	78.0

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

70. In Scotland, the most common intercultural activities reported by head teachers were activities that encourage students' expression of diverse identities (98.2%), learning about the histories of diverse cultural groups that live in other countries (97.9%), and learning about diverse groups that live in our country (95.8%). A higher proportion of head teachers in Scotland reported cultural learning activities and multicultural events than the OECD average. However, a lower than OECD average proportion of head teachers reported exchange programmes and communicating with people from other countries using digital means.

¹⁶ 27 OECD member states participated in the Global Competence questionnaire

Are teachers prepared for teaching global competence?

71. Teachers participating in PISA 2018 were asked three sets of questions about their readiness to teach the skills needed to live in an interconnected world. The questions focused on teachers' professional development needs, on opportunities to promote intercultural skills in lessons and on their sense of self-efficacy in teaching those topics. Teachers in 18 countries/economies completed the teacher questionnaire.

72. Teachers were asked four yes-or-no questions about whether they received training in: teaching in multicultural or multilingual settings, second-language teaching, teaching intercultural communication skills, and teaching about equity and diversity. The questions covered training in teachers' development programmes and in-service training during the 12 months prior to the PISA 2018 assessment.

Table 9.4: Percentage of students whose teachers received professional development in the following areas

	Scotland	Average of countries ¹⁷
Teaching in a multicultural or multilingual setting (included in teacher education)	19.2	30.4
Second-language teaching (included in teacher education)	10.9	28.2
Communicating with people from different cultures or countries (included in teacher education)	12.7	28.3
Teaching about equity and diversity (included in teacher education)	35.2	45.4
Teaching in a multicultural or multilingual setting (included in training activities in the previous 12 months)	14.2	19.0
Second-language teaching (included in training activities in the previous 12 months)	8.7	12.8
Communicating with people from different cultures or countries (included in training activities in the previous 12 months)	14.3	18.4
Teaching about equity and diversity (included in training activities in the previous 12 months)	40.7	31.1
Intercultural communication	10.2	34.3
Conflict-resolution strategies	58.8	59.4
The role education can play in confronting discrimination in all its forms	41.3	48.0
Culturally-responsive teaching approaches and techniques	11.3	37.0
Teaching in multi-cultural classrooms	16.3	33.2

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

¹⁷ 18 countries participated in the Teacher Questionnaire

73. In initial teacher education, the most common form of training that teachers reported was teaching about equity and diversity (35.2%), teaching in a multicultural or multilingual situations (19.2%), and communicating with people from different cultures or countries (12.7%). When reporting on training activities in the previous 12 months, the most common types of training reported were teaching about equity and diversity (40.7%) and communicating with people from different cultures or countries (12.7%). 58.8% of students had teachers who reported receiving training on conflict-resolution strategies at some point, while 41.3% had teachers who reported training on the role education can play in confronting discrimination in all its forms. Compared to the average for the 18 countries participating in the teacher survey, pupils in Scotland were less likely to have teachers who reported receiving almost all of the types of training listed above.

74. Teachers were also asked a set of four questions about their professional development needs. Their answers were given on a four-point scale: “No need at present”, “low level of need”, “moderate level of need”, and “high level of need”. The questions covered the need for training in teaching in a multicultural or multilingual setting, second-language teaching, teaching intercultural communication skills, and teaching about equity and diversity.

Table 9.5: Percentage of students whose teachers reported needing professional development in the following areas:

	Scotland	Average of countries ¹⁸
Teaching in a multicultural or multilingual setting	45.8	54.2
Second-language teaching	29.4	44.8
Communicating with people from different cultures or countries	32.4	46.4
Teaching about equity and diversity	26.1	42.2

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

75. Teachers in Scotland were most likely to indicate a need for training in teaching in a multicultural or multilingual setting (45.8%). Respondents in Scotland were less likely than the average of all participating countries to indicate that they required training in global competence related issues.

76. In PISA 2018, teachers were asked to respond to five statements that indicate the extent to which they feel capable of teaching in multicultural settings. Responses were given on a four-point scale: “strongly agree”, “agree”, “disagree” and “strongly disagree”. The responses were combined to create the index of teacher self-efficacy in multicultural environments.

¹⁸ 18 countries participated in the Teacher Questionnaire

Table 9.6: Percentage of students whose teachers reported that they can teach in multicultural and diverse classrooms

	Scotland	Average of countries ¹⁹
I can cope with the challenges of a multicultural classroom	83.0	83.0
I can adapt my teaching to the cultural diversity of students	82.2	86.3
I can take care that students with and without migrant backgrounds work together	85.8	86.8
I can raise awareness of cultural differences amongst the students	79.7	88.8
I can contribute to reducing ethnic stereotypes between the students	89.1	90.1
Index of self-efficacy	-0.01	0.02

Figures in **bold** represent the figure which is statistically significantly higher (where a statistically significant difference exists)

77. Scotland was similar to the average of all participating countries for the percentage of students whose teachers reported that they can teach in multicultural and diverse cultures. Teachers are most likely to be confident about contributing to reducing ethnic stereotypes between the students (89.1% of students whose teacher reported this) and taking care that students with and without migrant backgrounds work together (85.8%).

¹⁹ 18 countries participated in the Teacher Questionnaire

Appendix 1: Countries/economies participating in PISA 2018 Global Competence

	Global competence (cognitive test)	Global competence (student questionnaire)	Global competence (parent questionnaire)	Global competence (teacher questionnaire)
Albania	Y	Y	N	Y
Argentina	N	Y	N	N
Australia	N	Y	N	N
Austria	N	Y	N	N
Baku (Azerbaijan)	N	Y	N	Y
Belarus	N	Y	N	N
Belgium	N	N	N	N
Bosnia and Herzegovina	N	Y	N	N
Brazil	N	Y	Y	Y
Brunei Darussalam	Y	Y	N	N
Bulgaria	N	Y	N	N
Canada	Y	Y	N	N
Chile	Y	Y	Y	Y
China (People's Republic of)	N	N	N	N
Chinese Taipei	Y	Y	N	Y
Colombia	Y	Y	N	N
Costa Rica	Y	Y	N	N
Croatia	Y	Y	Y	N
Cyprus	N	Y	N	N
Czech Republic	N	N	N	N
Denmark	N	N	N	N
Dominican Republic	N	Y	Y	Y

Estonia	N	Y	N	N
Finland	N	N	N	N
North Macedonia	N	Y	N	N
France	N	Y	N	N
Georgia	N	N	N	N
Germany	N	Y	Y	Y
Greece	Y	Y	N	N
Hong Kong (China)	Y	Y	Y	Y
Hungary	N	Y	N	N
Iceland	N	Y	N	N
Indonesia	Y	Y	N	N
Ireland	N	Y	Y	N
Israel	Y	Y	N	N
Italy	N	Y	Y	N
Japan	N	N	N	N
Jordan	N	Y	N	N
Kazakhstan	Y	Y	N	N
Korea	Y	Y	Y	Y
Kosovo	N	Y	N	N
Latvia	Y	Y	N	N
Lebanon	N	Y	N	N
Lithuania	Y	Y	N	N
Luxembourg	N	N	N	N
Macao (China)	N	Y	Y	Y
Malaysia	N	Y	N	Y
Malta	Y	Y	Y	N
Mexico	N	Y	Y	N
Montenegro	N	Y	N	N
Morocco	Y	Y	N	Y

Netherlands	N	N	N	N
New Zealand	N	Y	N	N
Norway	N	N	N	N
Panama	Y	Y	Y	Y
Peru	N	Y	N	Y
Philippines	Y	Y	N	N
Poland	N	Y	N	N
Portugal	N	Y	Y	Y
Qatar	N	N	N	N
Republic of Moldova	N	Y	N	N
Romania	N	Y	N	N
Russian Federation	Y	Y	N	N
Saudi Arabia	N	Y	N	N
Serbia	Y	Y	N	N
Singapore	Y	Y	N	N
Slovak Republic	Y	Y	N	N
Slovenia	N	Y	N	N
Spain	Y	Y	N	Y
Sweden	N	N	N	N
Switzerland	N	Y	N	N
Thailand	Y	Y	N	N
Turkey	N	Y	N	N
Ukraine	N	Y	N	N
United Arab Emirates	N	Y	N	Y
United Kingdom (Excl. Scotland)	N	N	N	N
United Kingdom (Scotland)	Y	Y	N	Y
United States	N	N	N	N
Uruguay	N	Y	N	N

Viet Nam	N	Y	N	N
Number of countries participating	27	66	14	18



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